third and fourth cross-wise gussets are mounted between said first and second gussets, said third and fourth gussets to provide flange continuity to said second pair of flanges of said post.

Attached hereto is a marked up version of the changes made to the claims by the current amendment entitled **"Version with markings to show changes made"**.

Remarks

1) Summary of The Office Action

The applicant respectfully notes that the present Office Action was mailed from the Patent Office on January 30, 2002. An Information Disclosure Statement was filed on the applicant's behalf on January 23, 2002, so the Examiner's review of that Information Disclosure Statement is not noted in the present Office Action. The applicant requests that the Examiner indicate the review of the Information Disclosure Statement in the next action in this case. Particularly, the applicant directs the Examiner's attention to US Pat. 2,996,020 to Udstad, which discloses a railroad car for carrying automobile bodies, having a roof and removable side panels, and US Pat. 6,199,486 to Landrum.

Claims 1 – 48 were pending in the case. In the Office Action, the Examiner rejected claims 1, 22, 25, 30, 32, 36, 44, and 45 under 35 USC 112. The Examiner rejected claims 1- 28 and 30 to 35 under 35 USC 103 as being unpatentable over US Patent 4,951,575 of Dominguez et al., in view of Beals (USP 5,943,963). The Examiner also rejected claims 36-41 as being obvious over Dominguez '575 in view of Harris (USP 4,681,041). Claims 42-43 are rejected as obvious over the combination of Dominguez '575, Harris '041 and Saxton (USP 5,758,584). Claims 44-46 were rejected as obvious over the combination of Dominguez '575 and Saxton '584. Claims 47-48 were rejected as obvious over the combination of Dominguez '575, Saxton '584 and Butcher (USP 4,802,420).

Claim 29 is considered allowable if in independent form, and it is amended to put it into such form.

2) Claim Rejections Under 35 USC 112

Top of Rail

In the context of claims 1, 22, 25, 32, and 45 the Examiner has objected to use of the term "top of rail".

The term "top of rail", sometimes simply abbreviated as TOR (see present application, paragraph [0047]), refers to the top of the rail road track. "Top of rail" or "top of the rails" is the universal datum for railcar vertical dimensions in North America, as indicated, for example, in AAR Plate 'C' as shown at p. 76 (and also in AAR plates B, E and F) of the *1980 Car and Locomotive Cyclopedia*, (Simmons-Boardman, Omaha, 1980) and in the center of gravity vertical height limit

on p. 73, also as cited above. "Top of rail" is a term fully understood by persons skilled in the art of North American rail road car design and operation. This is demonstrated, for example, by use in the *Cyclopedia*. The applicant submits that as such persons skilled in the art would have no difficulty in understanding the language or meaning of claims 27, 29 and 30. See also *The Car and Locomotive Cyclopedia 1997* (Simmons-Boardman, Omaha, 1997) at pages 47 – 50, 52 – 54, 69, 81, 82, 87, 96, 105, 109, 110, 176 – 183, 195, 209, 213, 218, 274, 712 – 714, 726, 728, and 730.

In any case, in an effort to emphasize that the applicant is referring to this universal datum, the term has been capitalised in the claims.

Claim 30

Claim 30 has been amended to depend from claim 29. The applicant believes that this will yield an appropriate antecedent basis for the terms in claim 30.

Claim 36

The Examiner has indicated that the term "shear panel extension member" is not clearly defined in the specification or shown in the provided figures.

The applicant draws the Examiner's attention to page 25, paragraph [0090] at which the relationship of web 61 (or 62) to gusset plates 280 – 283 is described. Gusset plates 280 – 283 are identified as acting as web extensions (see also Figure 5c). As such, the applicant believes that these items are clearly defined in the specification and shown in the Figures.

Claim 44

Claim 44 has been amended to include the word "arms" as suggested by the Examiner.

Claim 48

The word "thrid" has been amended to read "third" as suggested by the Examiner.

3) Claim Rejections Under 35 U.S.C. 103 – Obviousness - Law

(a) MPEP Section 2142: Basic Requirements of a *Prima Facie* Case of Obviousness

Section 2142 of the Manual of Patent Examining Procedure (MPEP) states:

ESTABLISHING A *PRIMA FACIE* CASE OF OBVIOUSNESS

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on the applicant's disclosure. *In re Vaeck,* 947 F. 2d 488, 20 USPQ2d 1438 (Fed. Cir 1991).

(b) Mere Possibility of Combination is Not Sufficient

Section 2143.01 of the Manual of Patent Examining Procedure (MPEP) states:

FACT THAT REFERENCES CAN BE COMBINED OR MODIFIED IS NOT SUFFICIENT TO ESTABLISH *PRIMA FACIE* OBVIOUSNESS

"The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)

(c) Must Have Teaching, Suggestion, or Incentive to Combine

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention *absent some teaching, suggestion or incentive* supporting the combination *ACS Hospital Systems Inc. v. Montefiore Hospital*, 732 F. 2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir.). See also *In re Lee*, (Case No. 00 – 1158 CAFC, January 18, 2002).

Cited in *In re Geiger*, 815 F.2d at 688, 2 USPQ 2d at 1268 (Fed. Cir. 1987) (Emphasis added).

Obviousness cannot be established by combining references without also providing objective evidence of the motivating force that would impel one skilled in the art to do what the patent applicant has done (See *In Re Lee, supra*; see also *Ex Parte Levengood*, 28 USPQ2d 1300, 1302 (Bd. Pat. App. & Inter. 1993)).

(d) Inquiry Must Present a Convincing Line of Reasoning

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed toward obvious subject matter, either the references must expressly or impliedly, suggest the claimed invention or the

examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex Parte Clapp,* 227 USPQ972, 973 (Bd. Pat. App. & Inter. 1985) (Emphasis added).

...

When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the examiner to explain why the combination of the teachings is proper. *Ex Parte Skinner,* 2 USPQ2d 1788 (Bd. Pat. App. & Inter. 1986)."

(e) Inquiry Must Be Thorough And Searching

"The factual enquiry whether to combine the references must be thorough and searching. Id., It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. ...

"The need for specificity pervades this authority. See e.g.,

"*In re Kotzab* 217 F. 3d 1365, 1371, 55 USPQ 2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.");

In re Rouffet, 149 F.3d 1350, 1359, 47 USPQ 2d 1453, 1459 (Fed. Cir. 1998 ("even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.");

In re Fritch, 972 F. 2d 1260, 1265, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992) (The examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary shill in the art would lead that individual to combine the relevant teachings of the references")."

(See *In re Lee*, cited above. Emphasis and paragraph division added.)

Conclusory statements by an examiner do not adequately address the issue of motivation to combine. – *In re Lee, supra.*

(f) "Would have been obvious to one skilled in the art"

The MPEP requires that the examiner provide an objective source of support for a contention that a feature is known or obvious to one skilled in the art. An unsupported statement that a feature or combination "would have been obvious to one skilled in the art" is improper if made without support. *In re Lee, supra*, and *In re Garrett* 33 BNA PTCJ 43.

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made because references relied upon teach that all aspects of the claimed invention were individually known in the art" is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ 2d 1300 (Bd. Pat. App. & Inter. 1993). See also *Al-site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ 2d 1161 (Fed. Cir. 1999) (The level of skill in the art cannot be relied upon to provide suggestion to combine references).

(g) Destruction of Function

> "If proposed modifications would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon,* 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

4) Application Of Law To Rejections Under 35 USC 103

(i) US Patent 4,951,575 of Dominguez

The Dominguez patent shows and describes a depressed center beam flat car. The flat car includes an intermediate depressed floor section **42** bounded by intermediate side sill sections **30**. Floor section **42** is shown in Figure **1** in a depressed planer orientation relative to below floor sheets **40** of the end portions of the car. Floor section **42** is stepped downward by approximately fourteen to eighteen inches (col. 4, lines 31 – 35). The stated object of the invention in the Dominguez patent is to provide center beam or center partition cars that not only provide greater efficiency, but also demonstrate stability during loading and unloading and while being transported.

Examiner's Rejection

In concluding his rejection on the basis of Dominguez in view of Beals, the Examiner states:

> "It would have been obvious to one of ordinary skill in the art at the time of the invention, to utilize a pair of end bulkheads that extend to a greater height than a central beam assembly, as taught by Beals, in combination with the center beam railroad car as disclosed by Dominguez et al., *for the purpose of providing a center beam railroad car that is capable of carrying greater loads.*" (Emphasis added).

The applicant respectfully traverses the premise of these comments.

It appears that Dominguez contemplated the parameters that could have an impact on, and in his opinion maximize, the payload efficiency. Dominguez comments:

(1) At col.2, lines 21-27:

> "The depressed loading area of the depressed center beam car herein disclosed also significantly *increases the available volumetric capacity* for loading modules and also substantially lowers the center of gravity of empty and fully loaded cars. The car of the invention *is designed within the AAR Plate C clearance diagram.*" (Emphasis added)

(2) At col. 2, lines 36-49 :

> "The depressed section for carrying loads thus results in an *additional carrying capacity* over known cars of approximately 26,460 pounds for lumber having a density of 31.5 pounds per cubic feet. Thus, the payload carrying efficiency is 196,560/200,000 or 98.3% which *achieves an efficiency of over 15% over current center beam/center partition cars.* It is also estimated that incorporation of the depressed floor section of the invention will *decrease the loaded car center of gravity in the range of ten to fourteen inches.* The reduced center of gravity decreases the probability of the car tipping over during the loading/unloading cycles and *significantly improves* the track worthiness and ride stability of the car." (Emphasis added)

Re: Independent Claim 2

Claim 2 formerly depended from claim 1. Claim 1 has been cancelled. Claim 2 has been converted by amendment to an independent claim.

The applicant traverses the Examiner's rejection of claim 2. In rejecting claim 2 on the basis of Dominguez in view of Beals, the Examiner wrote:

> "The use of bulkheads that extend to a height extending beyond AAR Plate C, ...[and various other features] ... are all design choices based upon the desired load to be carried by a center beam railroad car, and the required size of said railroad car in order for it to be able to support the desired load."

The applicant responds to this rejection in two ways:

(A) Dominguez' Statement

First, Dominguez himself says otherwise.

Dominguez says, at col. 2, lines 25 - 27: "The car of the invention *is designed within the AAR Plate C clearance diagram.*" (Emphasis added).

Having been told by Dominguez himself that the car falls within AAR Plate C, the applicant submits that a person skilled in the art would not readily conclude that it was, or is, obvious to modify the car to exceed AAR plate C. To make such a modification, a person skilled in the art would have to reject Dominguez' statement. In that light the applicant respectfully submits that, if anything, a person skilled in the art would be led by Dominguez away from the modification proposed by the Examiner.

As such, the applicant submits that Dominguez' words do not provide a suggestion, motivation, or incentive to make the modification proposed by the Examiner, and therefore submits that grounds for a *prima facie* rejection under 35 USC 103 have not been established. The applicant submits that claim 1 is allowable over the art cited by the Examiner.

(B) *In re Garratt*

Second, as will be repeated below, the rejection itself is unsupported. The applicant draws the Examiner's attention to *In re Garratt*, 33 PTCJ 43, (B.P.A.I., November 13, 1986). A copy is enclosed for the Examiner's review.

In that case the Examiner had made a rejection to a claim for a borehole apparatus. In rejecting the claim under 35 USC 103, the Examiner wrote:

> "Furthermore, wear blades having parallel sides are notoriously well known in the prior art and one of ordinary skill in the art would, through routine engineering design choice, elect to provide a borehole contacting apparatus with blades having parallel sides."

In overturning the rejection, the board stated, in part:

> "With respect to the proposed modification..., *the examiner has not presented any line of reasoning* as to why the artisan would have been motivated to so modify [the reference] and we know of none. *The examiner's assertion* at page 4 of the answer that the proposed modification would have been "an obvious matter of engineering design choice well within the level of skill of one of ordinary skill in the art" *is a conclusion, rather than a reason.*"
>
> "Accordingly the rejection of claims 1 through 4 ... [and other claims] ... under 35 USC 103 is reversed." (Emphasis added)

As the Examiner will no doubt have remarked, the rejections made in the present application case on the basis of "...are all design choices ..." is precisely the type of rejection found to be unacceptable by the board in *Garratt*.

The issue is not whether a person skilled in the art could make the modification suggested by the Examiner to arrive at the invention, this issue is whether a person skilled in the art would make the modification. The law requires that the Examiner give a reason why the person skilled in the art would be motivated to choose the various features. *In re Mills* stands for the proposition that the Examiner must explain the desirability of the modification. Unsupported conclusory statements as in *Garratt* do not discharge the burden of showing suggestion, motivation, or incentive to make the modification, as is required by the test for obviousness under 35 USC 103. (*In re Lee*, supra)

In any case, the applicant respectfully submits that in light of *In re Garratt* the rejection of claim 2 is not properly made.

Independent Claim 11

Claim 11 was formerly dependent from claim 1. Claim 1 has been cancelled, as noted above, and claim 11 has been re-written in independent form.

The Examiner has rejected claim 11 in the same terms as claim 2, on the basis of Dominguez in view of Beals, but rather than objecting to the recitation of AAR Plate C, as in claim 2, the rejection is based on the downward step of at least 30 inches.

Again, the applicant traverses this rejection. The applicant has two grounds of traverse.

(A) *In re Garratt*

In the same manner as the rejection of claim 2, the rejection of claim 11 is not properly made, in light of *In re Garratt*, discussed above. Therefore the applicant submits that grounds for rejection of claim 11, and claims dependent from it, have not been established under 35 USC 103.

(B) Dominguez Teaches Against Invention of Claim 11

(1) Dominguez' comments (e.g., col. 2, lines 5 – 50), show that Dominguez sought (a) to maximise the load carried by his depressed deck center beam car; and (b) to drop the center of

gravity of the car. Dominguez also tells us that it is an object of his invention to increase operating efficiency, which he defines in terms of maximising payload (see, again, col. 1, lines 44 – 48 and col. 2, lines 36 – 50). He does this by increasing the volumetric capacity of the car.

(2) Given this desire of Dominguez, it is reasonable to infer that if Dominguez could have dropped the central portion of his deck any further to increase payload, he would have done so. Presumably, therefore, Dominguez' central deck portion is as low as Dominguez could make it within the AAR Plate C clearance diagram (col. 2, lines 21 – 27). Yet Dominguez tells us that the deck is 14 to 18 inches below the end deck portions (col. 4, lines 31 – 35), not 30 inches or more.

(3) Therefore, to achieve the step of at least 30 inches, as presently claimed, for example, in claim 11, one would presumably have to raise the end deck portions of Dominguez. Deliberately raising the end portions of the deck to obtain a 30 inch step would appear to raise the center of gravity, and to decrease the volumetric capacity of the Dominguez car, and hence also to decrease the payload efficiency so prized by Dominguez.

(4) As such Dominguez teaches against the present invention of claim 11, and hence against the modification proposed in the office action. That is, a person skilled in the art, seeking to achieve the objectives expressed by Dominguez (namely, optimised payload efficiency, increased volumetric capacity, and lowered center of gravity), would not deliberately raise the end deck portions apparently to decrease the volumetric capacity, to reduce the payload efficiency, and to raise the center of gravity of the car.

(5) In that light, the applicant submits that a person skilled in the art would be led by Dominguez away from the modification proposed in the office action and away from the invention of claim 11.

(6) It follows that grounds for a rejection of claim 11, and any claims dependent therefrom, on the basis of a combination of Dominguez et al, and any other reference whether Beals or some other, have not been established under 35 USC 103.

In conclusion, given that Dominguez teaches away from the proposed modification, the applicant therefore respectfully submits that claim 11, and all of the claims dependent from claim 11 are allowable over the prior art cited by the Examiner.

Claims Dependent from Claim 2 or Claim 11

The applicant traverses all of the rejections of any of the claims dependent from claim 2 or

claim 11, namely claims 3 – 10, 12 – 28, and 31 – 35. To the extent that the Examiner has rejected these claims on the basis of "design choice" the applicant repeats the commentary made with regard to *In re Garratt* that such rejections are not properly made.

Further, the applicant explicitly denies that the features alleged to be mere "design choices" can be classified as such. The Examiner bears the burden of showing:

(a) that, as a factual matter, on the basis of objective evidence of record that the impugned features are merely a matter of "design choice"; and

(b) that, whether or not the features are a matter of "design choice", that, on the basis of the objective evidence of record, there is a suggestion, motivation, or incentive by which a person skilled in the art would understand the desirability of making the modification proposed by the Examiner.

The applicant submits that the rejections of the office action of January 30, 2002 do not discharge this burden. In consequence, the applicant respectfully submits that grounds for the rejections of claims 3 – 10, 12 – 28 and 31 – 35 under 35 USC 103 have not been established. As such the applicant submits that these claims are presently allowable.

Independent Claim 29

The Examiner indicated that claim 29 would be allowable if re-written in independent form and if rewritten to overcome the rejection under 35 USC 112. Claim 29 has been re-written in an independent form that the applicant submits is allowable over the art of record in the case. Claim 30 has been amended to depend from claim 29. The applicant submits that claim 29 is also allowable.

Dependent Claim 31

With regard to the rejection of claim 31, the applicant repeats the commentary made with respect to *In re Garratt*, cited above.

In addition, the applicant notes that under the third branch of the test for obviousness under 35 USC 103, the reference as modified in light of objective evidence of record must have all of the limitations of the claim. In that regard, the applicant has not found an internal draft pocket cap plate, as set out in the claim, to be shown in the art cited by the Examiner.

Further still, there has been no demonstration of a suggestion, motivation or incentive by which a person skilled in the art would understand the desirability of the cap plate arrangement in the claim.

Yet further still, the applicant submits that Dominguez impliedly teaches away from the claim. Dominguez has sought to maximise payload and minimize the height of the center of gravity. Both factors would lead to the use of end deck portions that are as low as possible. Dominguez' end deck portion appears to be the same height (more or less) as the top flange of Dominguez' center sill, which, itself acts as the cap plate of the coupler draft pocket. That being so, there is no room for a cap plate spaced below the top flange of the center sill. If, however, one is not so concerned with keeping the end deck portions at minimum height, but raises them to a level above the height of the top of the coupler, then there is room for an internal cap plate, as claimed in claim 31.

There is no suggestion of any of this in the art cited by the Examiner. As such, the applicant submits that claim 31 is allowable over the art cited by the Examiner.

Claims 32 –35

Claims 32 – 35 depend from claim 31, and, to the extent that claim 31 is allowable, the applicant submits that claims 32 – 35 are also allowable.

Independent Claim 36

The Examiner has rejected claims 36 – 41 under 35 USC 103 on the basis of Dominguez in view of Harris.

In order to establish a *prima facie* rejection for obviousness under 35 USC 103 it is necessary to demonstrate:

(1) a suggestion, motivation, or incentive in the prior art or in the objectively demonstrable knowledge of persons skilled in the art to make the proposed modification of the prior art;
(2) a reasonable likelihood of success; and
(3) that all of the features of the claims are present in the art as modified.

Leaving aside the issues of (1) suggestion, motivation or incentive; and (2) likelihood of success, the applicant notes that one of the elements of claim 36, the shear panel extension, does not

seem to have been referred to in the office action, and does not appear to be shown in either the Dominguez or Harris references. Furthermore, it is not fully clear that beams 82 are actually mounted "between" the webs of Harris' post. This would require knowledge of the inside of Harris' post 80, and this information does not appear to be provided by Harris.

As such, the applicant submits that the office action has not established element (3) of the test, namely the presence of all of the features of the claim in the art as it is proposed to be modified. Therefore the applicant submits that *prima facie* grounds for a rejection under 35 USC 103 have not been established, and that claim 36, and all claims dependent from claim 36 are presently allowable.

In view of the Examiner's rejection under 35 USC112, claim 36 has been amended to clarify the claim language. Specifically, (a) the shear panel extension is referred to consistently as the "shear panel extension" rather than the "shear panel extension member"; and (b) although it had formerly seemed implicit, it is now explicitly stated that the shear panel extension lies between the webs of the central vertical post, and that the shear panel extension is located longitudinally outboard of the shear panel.

Dependent Claims 37 - 43

To the extent that claim 36 is allowable, the applicant submits that claims 37 to 43 are also allowable.

Independent Claim 44

Independent claim 44 has been amended to indicate that the top chord meets the bulkhead at a height that is less than the full height of the bulkhead (i.e, the top chord meets the bulkhead at the first height, and the bulkhead extends to a greater height than said first height).

The top chord in Saxton meets the bulkhead at a full height, not a partial height, and the loading at the juncture of the top chord with the bulkhead is therefore different. That is, as explained in the disclosure at page 2, paragraph [0014], when the top chord meets the end bulkhead at some midlevel, or intermediate height (i.e., less than the full height) the juncture may tend to act as a discontinuity, or weakness, in the end bulkhead structure. When there is an end impact load (e.g., the cars are flat switched a little too aggressively while laded) the lading, and particularly the upper layer or layers of lading, may try to slide off the car to one end. If the lading is carried above the level of the top chord juncture with the end bulkhead, the impact of the top layer of lading with the bulkhead may tend to try to fold the top off the bulkhead, while lower down the impact may try

to fold the bulkhead backwards around the central vertical post.

In an effort to address this issue the applicant has reinforced the bulkhead both vertically and horizontally relative to the intermediate height junction of the center beam top chord to the bulkhead. Neither Saxton, nor Harris suggests, describes or illustrates this feature, nor would the two references, if combined as proposed, yield the invention as presently claimed. As such the applicant submits that claim 44, and all claims dependent therefrom, are allowable.

Other Amendments

Claims 7, 8, 9 and 10

The language of claims 7, 8, 9 and 10 has been amended to give internal coherency. First, the ratios of claims 7 and 8 have exchanged, since 4/3 is greater then 5/4. To similar effect, the dependencies of claims 9 and 10 have also been reversed.

In both claim 9 and claim 10, the term (H2 – H3) has been substituted in place of H2. The ratio set out in these claims pertains to the ratio of (1) the height from the end deck portion to the top of the bulkheads, calculated as (H1 – H3) to (2) the height from the end deck portion to the top of the center beam top chord, calculated as (H2 – H3). That is, the step height, H3, is subtracted from both the bulkhead height, H1, and the beam height, H2, not just one of them.

Claim 14

Claim 14 has been amended to depend from claim 2.

Claim 16

Claim 16 has been amended to depend from claim 14

Claims 18 – 24, and 26

Claims 18 – 24 and 26 have been amended to depend from claim 11.

Claims 27 and 31

Claims 27 and 31 have been amended to depend from claim 2.

Claim 28

Claim 28 has been amended to depend from claim 27.

6) Conclusion

In view of the foregoing arguments and claim amendments the applicant submits that the claims are in a condition to permit allowance. Therefore the applicant requests early and favourable disposition of this application.

Respectfully submitted,

Stephen L. Grant
Reg. No. 33,390
Hahn Loeser & Parks LLP
1225 W. Market St.
Akron, OH 44313
330-864-5550
Fax 330-864-7986
Email: slgrant@hahnlaw.com
Customer No. 021324

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the disclosure

Please revise paragraph [0077] to read:

[0077] As shown in Figure **4f** plates **212** and **214** terminate longitudinally inboard of the truck center at a location indicated as '**X1**'. Similarly, the inboard, mid-span portion of webs **103** and **104** of center sill **36** ends at a location indicated as '**X2**'. In the transition region, or portion , between '**X1**' and '**X2**', main sill **36** narrows on a taper defined by converging side sill web portions **215**, **217**. When viewed in the side view of Figure **4e**, it can be seen that portions **215** and **217** are trapezoidally shaped, and that while main sill **36** is narrowing in the lateral direction, it is also deepening in the vertical direction, as noted above. Internal gusset plates **219**, **221** are mounted inside center sill **36** at locations '**X1**' and '**X2**' and tend to maintain the desired sectional profile at the transition junctions. By providing this transition section, center sill **36** has a first, relatively wide portion extending longitudinally outboard from location '**X1**', and a second, relatively narrow middle, or waist, portion lying between '**X2**' at either respective end of the car longitudinally inboard of the transition. In [he] <u>the</u> preferred embodiment the outboard portion is 12 – 7/8" inside to suit the draft gear and coupler, and 14" outside, measured across the webs; the inboard portion is 9" inside and 10" outside width, measured across the webs.

Please amend paragraph [0082] to read:

[0082] It may also be noted that center beam **36** has deep section as compared to center beam cars of which the inventor is aware. That is, the depth of the center beam, taken at mid-span between the trucks, corresponds to the depth of a loaded bundle of lumber, that depth being over 30 inches, namely 33 – 5/8 inches (+/-) measured from lower flange **106** to upper flange **102**, such that the deck sheets of medial portion **29** extends laterally outward from lower flange **106**, and the deck sheets of end portion **27** and **28** extend laterally [outboeard] <u>outboard</u> away from upper flange **102**. At mid-span center sill **36** has an aspect ratio of height (measured over upper and lower flanges, **102** and **106**) to width (measured between the outside faces of webs **103** and **104**) that is more than 2.4 : 1, lying in the range of 3.0 : 1 to 5.0 : 1. In the preferred embodiment the aspect ratio about 3.4 : 1 A high aspect ratio beam, as shown, tends to permit the deck sections to be mounted at heights corresponding to the center sill flanges, without tending to require relatively more complicated intermediate deck staging above the upper flange of the center sill, or other complications.

Please amend paragraph [0089] to read:

[0089] The last bays of the central web structure are shear bays. That is, solid panels **61**, **62** (Figure [**29**] **2a**) are shear panels, or webs, welded along the longitudinal centerline of car **20** (or **70**) between the web of the nearest post **219** to end bulkhead **50** (or **52**) and the inner flange of beam **252**, namely end sheet **268**, and also between the shear plate of end decking portions **27** (or **28**) and top chord **32**. When car **20** (or **70**) is subject to an end load, such as an end impact when carrying a load of bundles of lumber, the nearest post **219** and box beam **252** act as the flanges of a deep beam whose web is the shear panel provided by solid panel **61** or **62**.

Please amend paragraph [0090] to read:

[0090] The juncture of the web, namely panel **61** (or **62**) is not aligned (i.e., is not co-planar with) with either leg **271** or leg **272** of box beam **252**, but rather is welded amidst sheet **268** between them. This alone may not necessarily provide a fully satisfactory joint. Gusset plates **280**, **281**, **282** and **283** are welded in the same plane as panel **61** (or **62**) to the back side, namely the longitudinally outboard face, of sheet **268** interstitially between the longitudinally inwardly extending horizontally planar legs of transverse beam members **261**, **262** and **263**, the end deck top flange **102**, and the lower leg of C-channel stub portion **278**. Gusset plates **280** to **283** act as web extensions [such that the web formed by the combination] of panel **61** (or **62**). Conceptually, the central portions of transverse beams **261** to **265**, welded with toes against sheet **268** form hollow section structural members of low aspect ratio (that is, their length between the legs of box beam **252** is short relative to their depth of section in the vertical direction). The vertical shear load imposed in gusset plates **280** to **283** (and in panel **60** or **61**) is reacted at either end of the transversely extending hollow sections. Thus the shear transfer may tend to occur over a distance corresponding to the overlap, and the tendency to out-of-plane deflection may tend to be reduced since the junction of panel **60** (or **61**) and sheet **268** is reinforced vertically, longitudinally, and in the transverse horizontal direction.

In the claims

1. (Cancelled) [A center beam rail road car comprising:
   a deck structure carried by rail car trucks, said deck structure having first and second end portions and a medial portion lying between said first and second end portions, said medial portion being stepped downward relative to said end portions;

first and second end bulkheads extending upwardly from opposite ends of said deck structure;

a central beam assembly running lengthwise along said rail road car between said bulkheads, said beam assembly standing upwardly of said deck structure; and

said bulkheads extending to a greater height [relative to top of rail] than said central beam assembly.]

2. (Amended) A center beam rail road car comprising:

a deck structure carried by rail car trucks, said deck structure having first and second end portions and a medial portion lying between said first and second end portions, said medial portion being stepped downward relative to said end portions;

first and second end bulkheads extending upwardly from opposite ends of said deck structure;

a central beam assembly running lengthwise along said rail road car between said bulkheads, said beam assembly standing upwardly of said deck structure;

said bulkheads extending to a greater height than said central beam assembly; and

[The center beam car of claim 1 wherein] said bulkheads [extend to a height] extending to a height beyond AAR plate 'C'.

7. (Amended) The center beam car of claim [1] 2 wherein said bulkheads have a height, H1, measured relative to said medial deck portion, and said central beam assembly has a height H2 measured relative to said [central beam assembly] medial deck portion; and the ratio of H1 to H2 is at least as great as [4 : 3] 5 : 4.

8. (Amended) The center beam car of claim 7 wherein the ratio of H1 to H2 is at least as great as [5 : 4] 4 : 3.

9. (Amended) The center beam car of claim [7] 8 wherein said medial portion of said deck structure is stepped downward relative to said end portions by a third height, H3, and the ratio of (H1 – H3) : [H2] (H2 – H3) is at least as great as 3 : 2.

10. (Amended) The center beam car of claim [8] 7 wherein said medial portion of said deck structure is stepped downward relative to said end portions by a third height, H3, and the ratio of (H1 – H3) : [H2] (H2 – H3) is at least as great as 4 : 3.

11. (Amended) A center beam rail road car comprising:

a deck structure carried by rail car trucks, said deck structure having first and second end portions and a medial portion lying between said first and second end portions, said medial portion being stepped downward relative to said end portions;

first and second end bulkheads extending upwardly from opposite ends of said deck structure;

a central beam assembly running lengthwise along said rail road car between said bulkheads, said beam assembly standing upwardly of said deck structure; and

said bulkheads extending to a greater height than said central beam assembly; and

[The center beam car of claim 1 wherein] said medial portion of said deck [is] being stepped downward relative to one of said end portions of said deck a distance of at least 30 inches.

14. (Amended) The center beam rail road car of claim [1] 2, wherein said central beam assembly includes a top chord member extending between said end bulkheads.

16. (Amended) The center beam rail road car of claim [11] 14 wherein said central beam assembly includes at least one post standing upwardly of said deck structure, and said top chord is wider than said at least one post.

18. (Amended) The center beam rail road car of claim [1] 11 wherein said medial deck portion lying between said two trucks is at least 28' - 0" long.

19. (Amended) The center beam rail road car of claim [1] 11 wherein said medial deck portion lying between said two trucks is at least 40' - 0" long.

20. (Amended) The center beam car of claim [1] 11 wherein said rail road car further comprises:

a center sill extending along said rail road car, said center sill having an upper flange, a lower flange, and at least one upright web connecting said upper and lower flanges;

said upper flange lying at a height corresponding to said first end portion of said deck structure; and

said lower flange lying at a height corresponding to said medial portion of said deck structure.

21. (Amended) The center beam rail road car of claim [1] 11 wherein:
said car has a pair of side sills extending along said deck structure;
said side sills each have a medial side sill portion mounted to said medial deck portion, said medial side sill portion having a first depth of section;
said side sills each have end side sill portions mounted to said end deck portions, said end side sill portions having a second depth of section; and
said first depth of section is less than said second depth of section.

22. (Amended) The center beam rail road car of claim [1] 11 wherein said end deck portions each have a lading interface upon which lading can be carried, and said respective lading interfaces each lie at a height greater than 42 inches above [top of rail] Top of Rail.

24. (Amended) The center beam rail road car of claim [1] 11 wherein:
a center sill extends along said deck structure;
said center sill has an end portion extending longitudinally outboard thereof;
said end portion of said center sill includes a top flange and a pair of spaced apart webs extending downwardly of said top flange;
said webs define sides of a draft sill portion of said center sill;
said end portion of said center sill includes a plate mounted between said webs below said top flange; and
said plate defining a top cap of said draft sill portion of said center sill.

25. (Amended) The center beam rail road car of claim 24 wherein said said top flange of said end portion of said center sill lies at a height greater than 42 inches above [top of rail] Top of Rail, and said end portions of said deck structure include deck plates mounted to said top flange.

26. (Amended) The center beam rail road car of claim [1] 11, wherein:
said car has a pair of side sills extending along said deck structure;
said side sills each have a side sill medial portion mounted to said medial decking portion, said medial side sill portion having a first depth of section;
said side sills each have side sill end portions mounted to said end decking structures, said end side sill portions having a second depth of section;
each of said side sills has a knee joining said side sill medial portion to each of said side sill end portions;

each said knee has a longitudinally inboard flange, a longitudinally outboard flange, and webbing extending therebetween;

said longitudinally outboard flange has a lower extremity and an upper extremity; and

said lower extremity lies at a longitudinally inboard station relative to said upper extremity.

27. (Amended) The center beam rail road car of claim [1] 2 wherein:

said car has a pair of side sills extending along said deck structure;

said side sills each have a medial side sill portion mounted to said medial decking portion;

said side sills each have end side sill portions mounted to said end decking structures; and

said medial side sill portion has a medial portion side sill web extending from a first margin to a second margin, said first margin lying at a greater height than said second margin, and said first margin lying a further distance transversely outboard than said second margin.

28. (Amended) The center beam rail road car of claim [25] 27 wherein said medial decking portion has at least one lading securement apparatus mounted to said medial portion side sill web.

29. (Amended) A center beam rail road car comprising:

a deck structure carried by rail car trucks, said deck structure having first and second end portions and a medial portion lying between said first and second end portions, said medial portion being stepped downward relative to said end portions;

first and second end bulkheads extending upwardly from opposite ends of said deck structure;

a central beam assembly running lengthwise along said rail road car between said bulkheads, said beam assembly standing upwardly of said deck structure; and

[The center beam rail road car of claim 1 wherein] said medial portion of said deck structure is connected to said first end portion of said deck structure at a transition member, said transition member including a foothold to facilitate ascent of said first end portion of said deck structure from said medial portion of said deck structure.

30. (Amended) The center beam rail road car of claim [27] 29 wherein said transition member includes a vertical transition bulkhead extending between said medial portion of said deck

structure to said first end portion of said deck structure, and said foothold is a step formed in said vertical transition bulkhead.

31. (Amended) The center beam rail road car of claim [1] 2 further comprising;

a center sill running along said deck structure;

said first end portion of said deck structure having a first end deck sheet;

said center sill having a first center sill end portion, said center sill end portion having an upper flange and a pair of spaced apart webs extending downwardly from said upper flange;

a draft pocket cap plate mounted within said first center sill end portion between said pair of spaced apart webs, said draft pocket cap plate lying at a lower level than said deck sheet; and

a draft pocket defined between said pair of webs and below said draft pocket cap plate.

32. (Amended) The center beam rail road car of claim 31 wherein a first bolster extends laterally from said main sill to support said first end portion of said deck structure, said bolster having a upper flange extending in a plane lying at a greater height [from top of rail] than said draft pocket cap plate.

36. (Amended) A center beam rail road car comprising:

a deck structure carried on railcar trucks for rolling motion in a longitudinal direction, a pair of first and second bulkheads extending upwardly of said deck structure at either end thereof, and a central beam assembly standing upwardly of said deck structure and running lengthwise along said deck structure between said bulkheads;

said central beam assembly having a top chord spaced upwardly from said deck structure, said top chord being rigidly connected to said bulkheads;

said first bulkhead having a bulkhead sheet having a first face oriented longitudinally inboard, and a central vertical post mounted longitudinally outboard of said bulkhead sheet, said central vertical post including a pair of first and second spaced apart webs extending longitudinally outboard of said sheet;

said central beam assembly including a shear panel extending longitudinally inboard of said bulkhead sheet, said shear panel lying in a plane offset from said webs;

said bulkhead having transverse beams mounted between said webs of said central

vertical post;

said bulkhead having at least one shear panel extension [member] mounted to said bulkhead sheet and extending longitudinally outboard therefrom, said shear panel extension lying longitudinally outboard of said shear panel and between said webs of said central vertical post, said shear panel extension being connected to at least one of said transverse beams.

44. (Amended) A center beam rail road car comprising:

a deck structure carried on railcar trucks for rolling motion in a longitudinal direction, a pair of first and second bulkheads extending upwardly of said deck structure at either end thereof, and a central beam assembly standing upwardly of said deck structure and running lengthwise along said deck structure between said bulkheads;

said central beam assembly having a top chord spaced upwardly from said deck structure at a first height [relative to top of rail], said top chord being rigidly connected to said bulkheads;

said bulkheads extending to a height greater than said first height;

said first bulkhead having a bulkhead sheet having a first face oriented longitudinally inboard, and a central vertical post mounted longitudinally outboard of said bulkhead sheet;

said central beam assembly includes a top chord mated with said bulkhead in line with said central vertical post;

said first bulkhead has a cross beam mated to said central vertical post at a height corresponding to said first height of said top chord; and

said cross beam lies longitudinally outboard of said first bulkhead sheet and includes a pair of first and second arms extending to either side of said central vertical post, each of said arms having a proximal portion mounted to said vertical post, and a distal portion lying transversely outboard thereof, each said arm being tapered to a smaller section at said distal portion than at said proximal portion;

whereby the connection of said top chord to said first bulkheads is reinforced both vertically and transversely.

45. (Amended) The center beam car of claim 44 wherein said first bulkhead extends to a second height [relative to top of rail], said second height being greater than said first height.

48. (Amended) The center beam car of claim 46 wherein:

said bolster has a pair of longitudinally spaced vertical webs; said bolster includes gussets mounted between said webs of said center sill in line with said spaced vertical webs to provide web continuity through said center sill;

first and second longitudinal gussets extend in vertical spaced apart planes between said spaced vertical webs, said first and second longitudinal gussets providing flange continuity to said first pair of flanges of said post; and

third and fourth cross-wise gussets are mounted between said first and second gussets, said [thrid] third and fourth gussets to provide flange continuity to said second pair of flanges of said post.

BNA's Patent, Trademark & Copyright Journal
News & Comment: Briefs
November 13, 1986

PATENTS, OBVIOUSNESS

The PTO Board of Patent Appeals and Interferences, in reversing an obviousness rejection, criticizes the examiner's statement that the proposed modification would have been "an obvious matter of engineering design choice." Such an assertion is a conclusion, not a reason, the board points out. (In re Garrett, 9/30/86)

The claimed invention pertains to a drill string stabilizer. All the claims at issue were rejected under 35 USC 103 for obviousness. The examiner stated that:

Furthermore, wear blades having parallel sides are notoriously well known in the prior art and one of ordinary skill in the art would, through routine engineering design choice, elect to provide a borehole contacting apparatus with blades having parallel sides.

The board reverses the rejection. Examiner-in-Chief Lindquist indicates that the examiner's statement sets forth a conclusion, not a reason.

33 PTCJ 43

END OF DOCUMENT

Ex parte William R. Garrett

Appeal No. 580-81 from Art Unit 245.
Application for Patent filed July 29, 1981, Serial No. 287,769, which is a Continuation-in-Part of Serial No. 187,350, filed September 15, 1980.
Fixed-Contact Stabilizer.

Board of Patent Appeals and Interferences

1986 Pat. App. LEXIS 8

CORE TERMS: examiner, blade, slot, stabilizer, skill, wear, proposed modification, borehole, engineering, reproduced, apparatus, locking, pocket, sided

September 30, 1986, Decided

[*1]

Before Henon, Craig and Lindquist, Examiners-in-Chief.

COUNSEL:

Frank S. Vaden, III et al. for appellant.
Frank S. Vaden III
Vaden, Eickenroht, Thompson, Bednar & Jamison
One Riverway, Suite 2420
Houston, TX 77056

Primary Examiner - Stuart S. Levy

Examiner - D. Werner.

OPINIONBY: LINDQUIST

OPINION:

Lindquist, Examiner-in-Chief.

This appeal is from the final rejection of claims 1 through 4, 7 through 10, 21 through 25, 27, 31 through 33, 44 through 50 and 52 through 56. Of the remaining claims in this application, claims 5, 6, 28, 29, 30 and 51 stand withdrawn from consideration and claims 11 through 20, 26, and 34 through 43 have been allowed by the examiner.

The invention pertains to a drill string stabilizer which is apparent from a reading of illustrative claim 44, reproduced below.

44. Borehole apparatus comprising

a tubular body having a flow axis,

said body having a plurality of equiazimuthally spaced substantially parallel sides [sic, sided?] slots each extending in a direction having at least a paraxial component, and

blade means received in each slot making an interference fit with the sides of the slot.

The references cited by the examiner are as follows:

Dixon et al. (Dixon)	3,680,647	Aug. 1, 1972
Bassinger	4,106,823	Aug. 15, 1978

[*2]

All the claims at bar stand rejected under *35 U.S.C. 103* as obvious. As evidence of obviousness, the examiner cites Bassinger as to claims 1 through 4, 21 through 25, 27, 44 through 50 and 52 through 56 and adds Dixon as to claims 7 through 10 and 31 through 33.

Reference is made to the brief and the answer for the respective positions of the appellant and the examiner.

OPINION

We note in passing that "said uppermost blade" in claims 2, 9, 22 and 33 lacks an antecedent basis. As noted in claim 44 reproduced above, it appears to us that "sides" should be "sided" to conform with the interpretation given the claim by the appellant and the examiner. That is to say, the appellant and the examiner have construed claim 44 as calling for plural slots each having substantially parallel sides, and so will we. The locking means at the ends of the blade components of claim 53 do not appear to be capable of locking with adjacent components and the slot ends.

We have considered the rejection of the claims at bar under section 103 in light of the respective positions of the appellant and the examiner and conclude that it cannot be sustained.

All the claims at bar require that the [*3] pockets or slots in the stabilizer body have substantially parallel sides. As disclosed in the paragraphs bridging pages 15 and 16 and pages 20 and 21 of the specification, the appellant means by this language that the pocket or slot sides are at least within a few thousands of an inch of being precisely parallel.

The examiner's contention to the contrary at the bottom of page 4 and the top of page 5 of the answer notwithstanding, sidewalls 21 and 22 of the wear blade supporting grooves of Bassinger are not substantially parallel; each is inclined at an angle of 30 degrees with respect to the other.

The examiner goes on to say at page 5 of the answer that,

"Furthermore, wear blades having parallel sides are notoriously well known in the prior art and one of ordinary skill in the art would, through routine engineering design choice, elect to provide a borehole contacting apparatus with blades having parallel sides."
Since this "prior art" has not been identified and is not before us, we will not comment upon it.

With respect to the proposed modification of the Bassinger structure by further coupling the wear blades to the stabilizer body with screws or bolts of the type disclosed [*4] by Dixon, the examiner has not presented any line of reasoning as to why the artisan would have been motivated to so modify the Bassinger structure, and we know of none. The examiner's assertion at page 4 of the answer that the proposed modification would have been "an obvious matter of engineering design choice well within the level of skill of one of ordinary skill in the art" is a conclusion, rather than a reason.

Accordingly, the rejection of claims 1 through 4, 7 through 10, 21 through 25, 27, 31 through 33, 44 through 50 and 52 through 56 under *35 U.S.C. 103* is reversed.

REVERSED